II. Current Research to Support the Establishment of the Inpatient Rehabilitation Prospective Payment System--Update of the RAND Analysis

A. Overview of the Updated Work for the Proposed Rule

In July 1999, we contracted with the RAND Corporation (RAND) to update their previous research discussed in section I of this proposed rule. The update included an analysis of FIM data, the FRGs, and the model rehabilitation prospective payment system using more recent data from a greater number of IRFs. The purpose of updating the previous research is to develop the underlying data necessary to assist us in designing, developing, implementing, monitoring, and refining the proposed Medicare IRF prospective payment system based on case-mix groups. In addition, RAND expanded the scope of their previous research to include the examination of several payment elements, such as comorbidities and facility-level adjustments, as well as focus on implementation issues, including evaluation and monitoring. The update is restricted to Medicare patient data and the payment system is designed for payment of Medicare inpatient operating and capital costs only.

Specifically, for this proposed rule, RAND performed the following tasks:

- Constructed an updated data file, using the most

recent data available from UDSmr, COS, HCFA, and other data sources.

- Determined the extent to which the UDSmr and COS data are representative of the Medicare population.
- Identified factors or variables that may be used to help us design and implement the payment system.
- Developed data on the elements of the payment system regarding the patient classification system, relative weights and payment rates for each case-mix group, facility-level adjustments, and patient-level adjustments.
- Developed data to examine the joint performance of all of the payment system elements by simulating facility payments for our analysis of the impact of implementing the payment system.
- Developed data to assist in identifying specific issues in connection with implementing the payment system.
- Presented options regarding the design and development of a system to monitor the effects of the payment system and other changes in the health care market on IRFs and on other post-acute care providers, including home health agencies and skilled nursing facilities, by measuring factors such as access, utilization, quality, and cost of care.

B. Construction of Data File for Analysis

Using the methodology in its previous research, RAND constructed a data file that was used to develop the proposed CMG patient classification system and the resulting payment weights, rates, and payment adjustments using more recent data. The analysis of this data file forms the basis of our discussion on the patient classification methodology and the structure of the payment system proposed in this rule. We expect that further analysis of the data file and review of the comments that we receive in response to this proposed rule may result in refinements to some patient CMGs and corresponding weights and rates.

C. Description of Sources of the Data File

The essential sources of the data file are Medicare program information and patient case-mix data. The Medicare program information includes patient discharge files (patient demographic, clinical, and financial information) and facility-level files (facility characteristics and financial information). Patient case-mix data is collected by IRFs using a patient assessment instrument. We are proposing to require the use of the MDS-PAC patient assessment instrument that includes patient case-mix data similar to the data collected on the UDSmr and COS, as described in section III of this preamble. However, the

availability of MDS-PAC data records is limited to the sample of providers that participated in the pilot and field tests during its development. Therefore, to initially establish the IRF prospective payment system, we will be using a larger number of data records (as compared to the 1994 data used in RAND's previous study) from UDSmr and COS to represent more adequately the total number of IRFs.

1. Medicare Program Data

For this proposed rule, RAND used calendar year 1996 and 1997 Medicare Provider Analysis and Review (MEDPAR) files. The MEDPAR file contains the records for all Medicare hospital inpatient discharges (including discharges for rehabilitation facilities). The data in the MEDPAR file include patient demographics (age, gender, race, residence zip code), clinical characteristics (diagnoses and procedures), and hospitalization characteristics (admission date, discharge date, days in intensive-care wards, charges by department, and payment information).

The Medicare cost report data is contained in the Health Care Provider Cost Report Information System (HCRIS). The cost report files contain information on facility characteristics, utilization data, and cost and charge data by cost center. For this proposed rule, RAND used the HCRIS file containing the most current available cost data for

cost reporting periods beginning during FYs 1996 and 1997. Supplementary information to this file includes-- (1) the wage data for the area in which an IRF is located, (2) data on the number of residents assigned to rehabilitation units and the distribution of resident time across inpatient and outpatient settings, (3) data on the number of Medicare cases at each IRF that represent Supplemental Security Income (SSI) beneficiaries, and (4) information about payments under the current reasonable cost payment system.

The Online Survey, Certification and Reporting System (OSCAR) file retains a list of all IRFs that are currently Medicare certified. For this proposed rule, RAND used the OSCAR file to identify instances in which we may be missing facility-level data.

2. Patient Case-Mix Data

We entered into agreements with the University at Buffalo Foundation Activities, Inc. and Caredata.com, Inc. to retrieve UDSmr and COS data, respectively, for RAND's updated research. For this proposed rule, RAND used both UDSmr and COS data that describe rehabilitation stays in participating hospitals for calendar years 1996 and 1997. The data include demographic descriptions of the patient (birth date, gender, zip code, ethnicity, marital status, living setting), clinical descriptions of the patient

(condition requiring rehabilitation, ICD-9-CM diagnoses, functional independence measures at admission and discharge) and the hospitalization data (encrypted hospital identifier, admission date, discharge date, charges, payment source, and an indicator of whether this is the first rehabilitation hospitalization for this condition, a readmission, or a short stay for evaluation).

D. Description of the Methodology Used to Construct the Data File

Under a separate contract, we contracted with RAND in September 1998 to construct a data file that linked the 1996 and 1997 UDSmr and COS patient records with patient records on the respective MEDPAR files that describe the same discharge. Under this contract, RAND determined the Medicare provider number(s) that correspond to each UDSmr/COS facility code. Next, RAND matched the UDSmr/COS and MEDPAR patients within the paired facilities.

Because of the proprietary and sensitive nature of the UDSmr and COS patient records, certain data fields that specifically identify the patient and the servicing IRF were encrypted. Therefore, as in RAND's previous study (see section I of this preamble), it was necessary to subject the UDSmr, COS, and MEDPAR records to a sophisticated and complex matching probability technique. The result produces

the most statistically valid match of patient/facility records and a data file that contains the characteristics of each Medicare beneficiary and his or her servicing IRF.

Because of the complex scope and nature of the matching technique used, we have included in Appendix A of this proposed rule a technical discussion of each step taken to create the data file. The tables contained in Appendix A show the actual effects of applying the matching technique on both the patient and facility records.

E. Representativeness of the Data File

It is extremely important to examine the quality of the resulting match, including the extent to which the linked MEDPAR and UDSmr/COS records are representative of the MEDPAR universe. After constructing the data file described in Appendix A, we believe that the file contains the best available data to construct a prospective payment system for all IRFs within the parameters of the statutory requirements. Our analysis of the data file allows us to develop the proposed CMG patient classification and payment system, described below in sections IV and V of this preamble.

F. Analyses to Support Future Adjustments to the Payment System

The principal goal of the analysis described above is

to determine the extent to which measurable patient characteristics permit classification of patients into identifiable groups that accurately predict the use of resources in inpatient rehabilitation facilities. The research to date indicates that CMGs are effective predictors of resource use as measured by proxies such as length of stay and charges. The use of these proxies is necessary because data that measures actual nursing and therapy time spent on patient care, and other resource use data, are not available. The scientifically structured collection of data on patient characteristics and patient-specific resource use may enhance our ability to refine the CMGs in a manner that supports our policy objectives for implementing a IRF prospective payment system. Accordingly, we have contracted with Aspen Systems Corporation to collect actual resource use data in a sample of IRFs. The data collected by Aspen will be submitted to RAND for analysis to determine if it can be used to support future refinements to the CMGs.